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67. An apparatus according to claim 65 wherein the pump controller is adapted to change the speed of the pump to closely approximate the shape of a portion of a condensation curve of pressure versus time.

68. An apparatus according to claim 67 wherein the pump controller is adapted to change the speed of the pump to closely approximate a smoothly changing portion of the condensation curve.

69. An apparatus according to claim 65 wherein the pump controller is adapted to change the speed of the pump a plurality of times.

70. An apparatus according to claim 65 wherein the pump controller is adapted to change the speed of the pump in a continuous manner.

71. An apparatus according to claim 65 wherein the pump controller is adapted to change the speed of the pump by adjusting a rotational speed of an evacuating member of the pump.

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72. An apparatus according to claim 65 further comprising a pressure gauge for measuring a pressure of the gas in the chamber and providing a signal to the pump controller and wherein the pump controller changes the speed of the pump in relation to the signal.

73. An apparatus according to claim 65 wherein the pump comprises an inlet connected to the chamber for evacuating the gas in the chamber and an outlet that exhausts the evacuated gas to atmospheric pressure.

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74. An apparatus according to claim 65 wherein the pump operates at less than about 10,000 rpm.

75. An apparatus according to claim 65 wherein the chamber comprises a load-lock, transfer or process chamber.

76. A method of evacuating a gas in a chamber using a pump, the chamber capable of holding a substrate, the method comprising the step of changing a speed of the pump to control a rate of evacuation of the gas in the chamber to reduce condensation of moisture in the chamber.

77. A method according to claim 76 comprising the step of changing the speed of the pump to control a rate of evacuation of the gas in relation to a pressure of the gas in the chamber.

78. A method according to claim 76 comprising the step of changing the speed of the pump in relation to a shape of a portion of a condensation curve of pressure versus time for the gas in the chamber.

79. A method according to claim 76 comprising the step of changing the speed of the pump to closely approximate a smoothly changing portion of the condensation curve.

80. A method according to claim 76 comprising the step of changing the speed of the pump a plurality of times.

81. A method according to claim 76 comprising the step of changing the speed of the pump in a continuous manner.

82. A method according to claim 76 wherein the step of changing the speed of the pump comprises adjusting a rotational speed of an evacuating member of the pump.

83. A method according to claim 76 further comprising the step of measuring a pressure of the gas in the chamber and changing the speed of the pump in relation to the measured pressure.

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~~84. An apparatus for processing a substrate, the apparatus comprising:~~

- ~~(a) a chamber for holding the substrate;~~
- ~~(b) a pump for evacuating a gas from the chamber; and~~
- ~~(c) means for changing a speed of the pump to control a rate of evacuation of the gas to reduce condensation of moisture in the chamber.~~

85. An apparatus according to claim 84 wherein said means changes the speed of the pump in relation to a pressure of the gas in the chamber.

86. An apparatus according to claim 84 wherein said means changes the speed of the pump in relation to a shape of a portion of a condensation curve of pressure versus time for the gas in the chamber.

87. An apparatus according to claim 84 wherein said means changes the speed of the pump to closely approximate a smoothly changing portion of the condensation curve.

88. An apparatus according to claim 84 wherein said means changes the speed of the pump a plurality of times.

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89. An apparatus according to claim 84 wherein said means changes the speed of the pump in a continuous manner.

90. An apparatus according to claim 84 wherein said means changes the speed of the pump by adjusting a rotational speed of an evacuating member of the pump.

91. An apparatus according to claim 84 further comprising means for measuring a pressure of the gas in the chamber, and wherein said means changes the speed of the pump in relation to the measured pressure of the gas in the chamber.

92. An apparatus for processing a substrate, the apparatus comprising:

- (a) a chamber for holding a substrate; and
- (b) a pump having an inlet connected to the chamber via a foreline for evacuating gas in the chamber, the foreline having an internal surface area of less than about 0.4 m^2 for a length of about 2 m, and the pump having an outlet that exhausts the evacuated gas to atmospheric pressure.

93. An apparatus according to claim 92 wherein the foreline comprises a length of less than about 2 m.

94. An apparatus according to claim 92 wherein the foreline comprises a diameter of less than about 80 mm.

95. An apparatus according to claim 92 wherein the pump comprises a pre-vacuum pump or a low vacuum pump.